Review **Calculations related to medications and IV drips, Basic Safety and Infection Control, National Patient Safety Goals, Pain Management, and Blood Administration.**

Review **assessment, interventions, monitoring, and care** for conditions commonly encountered in critical care nursing, including:

- Acute coronary syndrome (ACS)
- Acute heart failure
- Cardiac tamponade
- Cerebrovascular accident, early signs
- Compartment syndrome
- Diabetic ketoacidosis (DKA)
- Fluid overload
- Hypoglycemia, emergent treatment
- Hypotension
- ICU delirium
- Increased intracranial pressure, early signs
- Myocardial infarction, evolving
- Pulmonary embolism
- Septic shock
- STEMI, ECG finding
- Respiratory failure, acute, ABGs
- Tension pneumothorax
- Ventricular fibrillation
- Witnessed cardiac arrest, AHA guideline

Review action, preparation, monitoring, and precautions related to **medications** commonly used in critical care, such as

- Adenosine
- Amiodarone (Cordarone®)
- Aspirin
- Atropine
- Beta blockers such as metoprolol (Lopressor®)
- Benzodiazepines
- Calcium Gluconate
- Dextrose 50% (D50)
- Diltiazem (Cardizem®)
- Diuretics such as furosemide (Lasix®)
- Dopamine (Intropin®), indications, drip rate calculation, risk of extravasation
To calculate drip rate for mcg/kg/min:
- Infusion rate (mL/hr) = \( \text{dose (mcg)} \times \text{weight (kg)} \times 60 \text{ (min)} \times \frac{\text{Concentration in mg/mL}}{1000} \)

Example: A patient who weighs 80 kg has an order for dopamine (Intropin®) 5 mcg/kg/min. You place 400 mg of dopamine in a 500 mL bag of IV solution and administer at a rate of

- Concentration = 500 mg/250 mL = 2 mg/mL
- Dose = 5 mcg; weight = 80 kg
- \( 5 \text{ mcg} \times 80 \text{ kg} \times 60 \text{ min} = 24000 = 12 \text{ mL/min} \)
- \( 2 \text{ mg/mL} \times 1000 = 2000 \text{ mL/hr} \)

- Epinephrine
- Fentanyl
- Fibrinolytic therapy, indications/contraindications
- Heparin protocol
- Insulin sliding scale
- IV drops/minute calculation
- IV infusion calculation
- Lidocaine
- Metformin (Glucophage®)
- Milrinone (Primacor®)
- Morphine
- Naloxone (Narcan®)
- Nitroglycerin (Tridil®)
- Phenyltoin (Dliantin®)

Review treatments and procedures, including:
- Blood transfusion reaction
- Post-bronchoscopy
- Central venous pressure (CVP) line removal, complications
- Chest tube, high output
- Defibrillation, synchronized cardioversion
- Enteral feeding tube, importance of confirming placement
- Oxygen, use in ACS
- Radial arterial catheter, removal, possible complications
- Ventilator, patient assessment, settings adjustment based on blood gases, troubleshooting high pressure alarm
Review cardiac rhythm strip interpretation, including

- Atrial fibrillation, medication indicated
- Multifocal PVCs
- Ventricular tachycardia (V-tach)
- Pacemaker rhythm strip, failure to capture

A great source for ACLS protocol review is www.acls.net

A great source for rhythm review is the RN.com course Telemetry Interpretation

Also recommended:

- ECG Library (Jenkins, J & Gerrend, S., 2009)
  http://www.ecglibrary.com/ecghome.html

Review Laboratory Results commonly encountered in critical care, such as

- Arterial blood gases (ABGs)
  - Review the RN.com course, Interpreting ABGs: The Basics at http://www.rn.com/nursing-education/course-details/?course_id=2026
- Serum glucose, normal range
- Troponin levels (cTnI and cTnT), pattern in evolving MI

Review principles and practices related to safety and infection prevention, including

- Catheter-associated bloodstream infection (CLABSI) prevention bundle
- Catheter-associated urinary tract infection (CAUTI) prevention bundle
- Feeding tube placement
- Fall risk, elderly
- Handwashing, C. diff
- Patient identifiers
- Ventilator-associated pneumonia (VAP), prevention

Review principles and practices of communication with patients and family, including

- Patient satisfaction
- Balloon pump, benefit
Review measures to prevent **CMS Hospital Acquired Conditions**, including

- Blood transfusion reaction
- CAUTI prevention
- CLABSI prevention
- DKA management
- DVT, heparin protocol
- Hypoglycemia management
- Pressure ulcer staging
- Pulmonary embolus, risk with arterial catheter
- Risk for falling

Review **calculations**, including

- Medication protocols
- Sliding scale
- IV drip dosage calculations
- IV drip rate, calculating drops per minute

**To calculate the infusion rate: IV drip rate in drops per minute =**

**Volume to be infused (mL) over 1 hour/ Drop factor constant**

<table>
<thead>
<tr>
<th>Common drop factors</th>
<th>Drop factor constant</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 gtt/mL - minidrip set</td>
<td>1</td>
</tr>
<tr>
<td>10 gtt/mL – regular drip set</td>
<td>6</td>
</tr>
<tr>
<td>15 gtt/mL – regular drip set</td>
<td>4</td>
</tr>
</tbody>
</table>

Common drop factors are also known as the clock method – drop factors are obtained by dividing 60 minutes by the number of gtt per mL that the IV set delivers.